

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

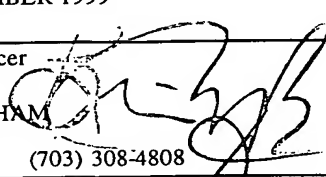
(PCT Article 36 and Rule 70)

Applicant's or agent's file reference TNCR.152W00	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/US98/19564	International filing date (day/month/year) 18 SEPTEMBER 1998	Priority date (day/month/year) 19 SEPTEMBER 1997
International Patent Classification (IPC) or national classification and IPC IPC(6): G01N 21/00, 21/86; G01B 11/24 and US Cl.: 356/237, 394, 364		
Applicant KLA-TENCOR CORPORATION		

- This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 4 sheets.
☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority. (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).
 These annexes consist of a total of 0 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of report with regard to novelty, inventive step or industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 24 MARCH 1999	Date of completion of this report 20 NOVEMBER 1999
Name and mailing address of the IPEA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231	Authorized officer  HOA Q. PHAM
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I. Basis of the report

1. This report has been drawn on the basis of *(Substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments):*

☒ the international application as originally filed.

☒ the description, pages 1-27 , as originally filed.

pages NONE , filed with the demand.

pages NONE , filed with the letter of _____.

pages _____ , filed with the letter of _____.

☒ the claims, Nos. 1-88 , as originally filed.

Nos. NONE , as amended under Article 19.

Nos. NONE , filed with the demand.

Nos. NONE , filed with the letter of _____.

Nos. _____ , filed with the letter of _____.

☒ the drawings, sheets/~~fig~~ 1-9 , as originally filed.

sheets/~~fig~~ NONE , filed with the demand.

sheets/~~fig~~ NONE , filed with the letter of _____.

sheets/~~fig~~ _____ , filed with the letter of _____.

2. The amendments have resulted in the cancellation of:

☒ the description, pages none .

☒ the claims, Nos. none .

☒ the drawings, sheets/~~fig~~ none .

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the ~~Supplemental Box~~ Additional observations below (Rule 70.2(c)).

4. Additional observations, if necessary:

NONE

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. STATEMENT**

Novelty (N)

Claims (Please See supplemental sheet)

YES

Claims (Please See supplemental sheet)

NO

Inventive Step (IS)

Claims (Please See supplemental sheet)

YES

Claims (Please See supplemental sheet)

NO

Industrial Applicability (IA)

Claims (Please See supplemental sheet)

YES

Claims (Please See supplemental sheet)

NO

2. CITATIONS AND EXPLANATIONS

Claims 1, 5-8, 23 and 38-42 lack novelty under PCT Article 33(2) as being anticipated by Amir et al. Amir et al discloses a method and apparatus for inspection of substrate comprises first means (34) for directing first beam of radiation along a first path onto the surface of the sample (10); second means (36) for directing a second beam of radiation along a second path onto a surface of the sample; a first detector (28) and means including a mirror (32) for receiving scattered light from the surface and focusing the scattered light to the first detector (28) (figures 1,3), the first path being substantially normal to the sample surface.

Claims 2-4, 11-18, 22, 24-25, 45-46, 48-53, 56-58 lack an inventive step under PCT Article 33(3) as being obvious over Amir et al in view of Siu. Amir et al does not teach that the mirror (32) is a paraboloidal mirror; however, such a feature is known in the art, for example as taught by Siu. Siu discloses a microelectronics inspection system in which the paraboloidal mirror is used for collecting scattered light from the surface to the detector (30). those of ordinary skill in the art at the time the invention was made to replace the flat mirror of Amir et al by a paraboloidal mirror of Siu for the purpose of collecting scattered light from the surface to the detector. It would have been obvious to use a light source, a beam splitter for alternative producing a first and second illuminated spots onto the sample surface. It also would have been obvious to use two different frequencies, S-Polarization and P-polarization to detect the anomalies of the sample.

Claims 2-4, 9-22, 24-37 and 43-88 meet the criteria of PCT Article 33(2) and claims 9-10, 19-21, 26-37, 43-44, 47, 54-55, 59-88 meet the criteria set out in PCT Article 33(3).

Claims 1-88 meet the criteria of PCT Article 33(4) industrial applicability, because the claimed invention is useful to industry.

(Continued on Supplemental Sheet.)

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Boxes I - VIII

Sheet 10

V. 1. REASONED STATEMENTS:

The report as to Novelty was positive (YES) with respect to claims 2-4, 9-22, 24-37, 43-88.

The report as to Novelty was negative (NO) with respect to claims 1, 5-8, 23, 38-42.

The report as to Inventive Step was positive (YES) with respect to claims 9-10, 19-21, 26-37, 43-44, 47, 54-55, 59-88.

The report as to Inventive Step was negative (NO) with respect to claims 1-8, 11-18, 22-25, 38-42, 45-46, 48-53, 56-58.

The report as to Industrial Applicability was positive (YES) with respect to claims 1-88.

The report as to Industrial Applicability was negative (NO) with respect to claims NONE.

V. 2. REASONED STATEMENTS - CITATIONS AND EXPLANATIONS (Continued):

----- NEW CITATIONS -----

US 5,650,614 A (YASUTAKE et al.) 22 July 1997 (22/07/97), see figures 2, 4, 5, 6 and column 3 lines 2-5 and column 5 lines 6-12.